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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,169	07/30/2003	Tong Xie	10030691-1	7648
57299 7590 04/03/2007 AVAGO TECHNOLOGIES, LTD. P.O. BOX 1920 DENVER, CO 80201-1920			EXAMINER PATEL, NITIN	
			ART UNIT	PAPER NUMBER
			2629	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/03/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/630,169	<b>Applicant(s)</b> XIE ET AL.	
	<b>Examiner</b> Nitin Patel	<b>Art Unit</b> 2629	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/9/2003</u> . | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-20 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-20 of U.S. Patent No. 7,161,682 (Xie et al.,).

As per claim 1, An optical navigation device comprising: a light source for illuminating a surface with a narrow bandwidth beam at an angle of illumination with respect to said surface; and a detector positioned at an angle of reflection with respect to said surface operable to receive a reflected portion of said narrow bandwidth beam, wherein said angle of reflection is substantially equal to said angle of illumination (see claim 1 of Xie).

As per claims 2, 3 the device wherein said light source is a laser (see claim 2) and wherein said laser is a VCSEL (see claim 3 of Xie).

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As per claims 4-5,6-7 It is well known in the art that using a LED for a light source could be substituted for either laser because it would have a adequate bright properly collimated and an LED source may have economical advantages and intensity control over a laser source.

As per claims 8,9 Xie shows detector array is a CMOS imager (see claim 4) and a collimation lens to improve the light collection efficiency (se claim 5).

As per claim 10, an imaging lens positioned to be operable to image said reflected portion of said narrow bandwidth beam onto said detector array (see claim 6).

As per claim 11, a system for controlling a positional pointer on a video screen of a computer using a mouse to detect relative motion with respect to a surface, said system comprising: means for generating narrow bandwidth specular reflection images, each said narrow bandwidth scatter pattern being specific to a portion of said surface over which said mouse moves; and means for converting said specific narrow bandwidth specular reflection images into signals corresponding to relative motion between said mouse and said surface(claim 8 of Xie).

As per claim 12,13 wherein said generating means comprises a narrow bandwidth light source (see claim 9 of Xie) wherein said means for converting comprises a processor located within said mouse (claim 10 of Xie).

As per claim 14, wherein said surface is chosen from paperlike surface, glossy type surface, painted surface and halftone surface (claim 13 of Xie).

As per claim 15, narrow bandwidth specular reflection images comprise surface features and interference features(claim 14 of Xie).

As per claim 16, a method for determining relative motion between an optical navigation device and a surface comprising: providing a narrow bandwidth light beam at an angle of illumination with respect to said surface for illuminating said surface; and receiving a reflected portion of said narrow bandwidth light beam at an angle of reflection with respect to said surface, such that said angle of reflection is substantially equal to said angle of illumination (claim 15 of Xie).

As per claims 17-20, wherein said narrow bandwidth light beam is provided by a laser and reflected portion of said narrow bandwidth light beam is received by a detector array and an image signal in response to said reflected portion of said narrow bandwidth light beam and comprising a processor to receive said image signal and produce an output signal for controlling a positional pointer (claims 16,17,18,20 of Xie claims).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Golberstein (U.S. patent No. 5,103,106).

As per claims 1,11,16 Golberstein shows a light source for illuminating an angle respect to the surface and a detector at an angle of reflection with respect to the surface

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operable to receive a reflected portion of the beam wherein the angle of reflection is substantially equal to the angle of illumination (in fig.4 and in col.10 lines 25-45).

Golberstien does not show an optical navigation device , but it would have been obvious to one of ordinary skill in the art, at the time of the invention was made that the device of Golberstien used for the measuring and comparing the characteristic of the surface to locate position and orientation would have used in an optical navigation device to measure the distance to output a signal relatively to the locating position.

As per claims 2-10,12-15,17-20 It is well known in the art that using a LED for a light source could be substituted for either laser because it would have a adequate bright properly collimated and an LED source may have economical advantages and intensity control over a laser source.

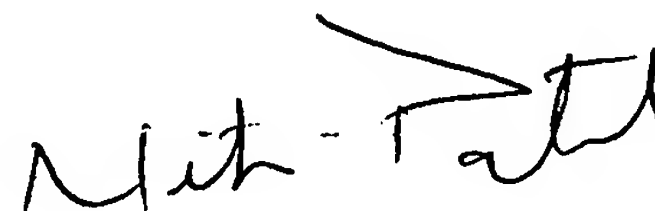
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nitin Patel whose telephone number is 571-272-7677. The examiner can normally be reached on 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin H. Shalwala can be reached on 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nitin Patel  
Primary Examiner  
Art Unit 2629

A handwritten signature in black ink, appearing to read "Nitin Patel", with a stylized flourish at the end.

NITIN I. PATEL  
PRIMARY EXAMINER